



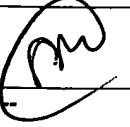
# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/747,765	12/29/2003	Leonard J. Lavasser	GROUND	9094
7590	08/11/2005		EXAMINER	
ROBERT J. HARTER 4233 CLIFFSIDE DRIVE LA CROSSE, WI 54601			PRESTON, ERIK D	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/747,765	LAVASSER ET AL. 
<b>Period for Reply</b>	Examiner	Art Unit
	Erik D. Preston	2834
<i>-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --</i>		
<b>A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.</b>		
<ul style="list-style-type: none"> <li>- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.</li> <li>- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.</li> <li>- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.</li> <li>- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).</li> </ul> <p>Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).</p>		
<b>Status</b>		
<p>1)<input checked="" type="checkbox"/> Responsive to communication(s) filed on <u>25 July 2005</u>.</p> <p>2a)<input checked="" type="checkbox"/> This action is <b>FINAL</b>.                    2b)<input type="checkbox"/> This action is non-final.</p> <p>3)<input type="checkbox"/> Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i>, 1935 C.D. 11, 453 O.G. 213.</p>		
<b>Disposition of Claims</b>		
<p>4)<input checked="" type="checkbox"/> Claim(s) <u>1-4,6-17 and 19</u> is/are pending in the application.</p> <p>4a) Of the above claim(s) _____ is/are withdrawn from consideration.</p> <p>5)<input type="checkbox"/> Claim(s) _____ is/are allowed.</p> <p>6)<input checked="" type="checkbox"/> Claim(s) <u>1-3,6-10 and 12-17</u> is/are rejected.</p> <p>7)<input checked="" type="checkbox"/> Claim(s) <u>4,11 and 19</u> is/are objected to.</p> <p>8)<input type="checkbox"/> Claim(s) _____ are subject to restriction and/or election requirement.</p>		
<b>Application Papers</b>		
<p>9)<input type="checkbox"/> The specification is objected to by the Examiner.</p> <p>10)<input type="checkbox"/> The drawing(s) filed on _____ is/are: a)<input type="checkbox"/> accepted or b)<input type="checkbox"/> objected to by the Examiner.</p> <p style="margin-left: 20px;">Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).</p> <p style="margin-left: 20px;">Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).</p> <p>11)<input type="checkbox"/> The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.</p>		
<b>Priority under 35 U.S.C. § 119</b>		
<p>12)<input type="checkbox"/> Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).</p> <p>a)<input type="checkbox"/> All    b)<input type="checkbox"/> Some * c)<input type="checkbox"/> None of:</p> <ol style="list-style-type: none"> <li>1.<input type="checkbox"/> Certified copies of the priority documents have been received.</li> <li>2.<input type="checkbox"/> Certified copies of the priority documents have been received in Application No. _____.</li> <li>3.<input type="checkbox"/> Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).</li> </ol> <p>* See the attached detailed Office action for a list of the certified copies not received.</p>		
<b>Attachment(s)</b>		
<p>1)<input type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2)<input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3)<input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____</p> <p>4)<input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____</p> <p>5)<input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6)<input type="checkbox"/> Other: _____</p>		

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-3, 6-8, 17 & 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neroda et al. (US 4315343 supplied by applicant) in view of Kiefer et al. (US 3875462 previously presented) in view of Yartz et al. (US 3159354 previously presented).

With respect to claims 1, 8, & 17, Neroda teaches a motor comprising: A housing (Fig 2, #44); an inboard bearing (Fig. 2, #48) supported by the housing; a bracket (Fig. 1, #43); an outboard bearing (as seen in Fig. 2) supported by the bracket; a stator (Fig. 2, #42) interposed between the housing and the bracket; a rotor (Fig. 2, #38) supported by the inboard and outboard bearings; an impeller (Fig. 2, #76) attached to the rotor for moving air, wherein the plastic housing defines a discharge outlet (Fig. 2, #74) for the impeller; and a fastening tie rod (as seen in Figure 2) that clamps the stator between the plastic housing and the bracket, but it does not teach the bracket being plastic; a metal bearing retainer engaging the inboard bearing such that electrical continuity is established between the rotor and the metal bearing retainer; a bearing retainer fastener that fastens the metal bearing retainer to the plastic housing such that the metal bearing retainer holds the inboard bearing to the plastic housing; and a metal ground strip having an attachment end, a terminal end, and a central portion there between, wherein the bearing retainer fastener attaches the attachment end to the

Art Unit: 2834

metal bearing retainer to establish electrical continuity between the rotor and the metal ground strap; and the ground strip having a central portion that extends between the stator and the plastic housing or the tie rod that clamping the stator between the plastic housing and the plastic bracket such that the central portion of the ground strip is held in compression between the stator and the plastic housing, whereby the terminal end of the metal ground strap provides a groundable connection to the stator and the rotor. However, Kiefer teaches a metal bearing retainer (Fig. 1, #104) engaging an inboard bearing such that electrical continuity is established between a rotor and the metal bearing retainer; a bearing retainer fastener (Fig. 1, #120) that fastens the metal bearing retainer to a plastic housing such that the metal bearing retainer holds the inboard bearing to the plastic housing; and a metal ground strip (Fig. 1, #48) having an attachment end, a terminal end, and a central portion there between, wherein the bearing retainer fastener attaches the attachment end to the metal bearing retainer to establish electrical continuity between the rotor and the metal ground strap, and Yartz teaches a motor comprising a metal ground strap (Fig. 1, #46) that extends between a stator (Fig. 1, #41) and a plastic housing (Fig. 1, #43); and a rod-like fastener (Fig. 1, #51) clamping the stator between the plastic housing and the plastic bracket such that the metal ground strap (Fig. 1, #46) is held in compression between the stator and the plastic housing, whereby the terminal end of the metal ground strap provides a groundable connection to the stator and the rotor. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the motor of Neroda in view of the metal bearing retainer as taught by Kiefer because it provides a means for

Art Unit: 2834

grounding the rotor of the motor (Kiefer, Col. 5, Lines 8-12), and to modify the motor of Neroda in view of the metal grounding strap as taught by Yartz because it establishes electrical continuity between the ground strap and both the stator and the rotor (Yartz, Col. 3, Line 63- Col. 4, Line).

With respect to claim 2, Neroda in view of Yartz in view of Kiefer teaches the motor of claim 1, wherein the tire rod extends through the metal ground strap.

With respect to claim 3, Neroda in view of Yartz in view of Kiefer teaches the motor of claim 1, wherein the tie rod threadingly engages the plastic housing (even though Neroda does not explicitly teach the tie rod being threaded, it is obvious in looking at Figure 2 that the tie rod has threads that engage the bracket).

With respect to claim 6, Neroda in view of Yartz in view of Kiefer teaches the motor of claim 1, wherein the plastic housing (Yartz, Fig. 1, #42) and the stator (Yartz, Fig. 1, #41) define a slot therebetween through which the central portion of the metal ground strap extends, wherein the slot has a depth that is greater than a material thickness of the group strap yet the central portion of the ground strap is still held in compression between the plastic housing and the plastic bracket. Since the ground strap fits in the slot, the slot must have a depth that is greater than the thickness of the strap.

With respect to claim 7, Neroda in view of Yartz in view of Kiefer teaches the motor of claim 1, but it doesn't teach the bearing retainer fastener being a rivet. However, rivets were well known in the art at the time of the invention. It would have been obvious to one of ordinary skill in the art at the time of the invention to use rivets

Art Unit: 2834

as fasteners because they don't require tapped holes, and they are less likely to loosen as a result of excess motor vibration.

Claims 9,10 & 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neroda et al. (US 4315343 supplied by applicant) in view of Kiefer et al. (US 3875462) in view of Yartz et al. (US 3159354) in view of Suzuki et al. (4798984 supplied by applicant).

With respect to claims 9, 14-16, Neroda teaches a motor comprising: A housing (Fig 2, #44); an inboard bearing (Fig. 2, #48) supported by the housing; a plastic bracket (Fig. 1, #43); an outboard bearing (as seen in Fig. 2) supported by the bracket; a stator (Fig. 2, #42) interposed between the housing and the bracket; a rotor (Fig. 2, #38) supported by the inboard and outboard bearings; an impeller (Fig. 2, #76) attached to the rotor for moving air, wherein the housing defines a discharge outlet (airguide) (Fig. 2, #74) for the impeller; and a fastening tie rod (as seen in Figure 2) that clamps the stator between the housing and the bracket, but it doesn't teach the housing being plastic; a metal bearing retainer engaging the inboard bearing such that electrical continuity is established between the rotor and the metal bearing retainer; a bearing retainer fastener that fastens the metal bearing retainer to the plastic housing such that the metal bearing retainer holds the inboard bearing to the plastic bracket; and a metal ground strip having an attachment end, a terminal end, and a central portion there between, wherein the bearing retainer fastener attaches the attachment end to the metal bearing retainer to establish electrical continuity between the rotor and the metal ground strap; the ground strip having a central portion that extends between the stator

and the plastic housing or the tie rod that clamping the stator between the plastic housing and the plastic bracket such that the central portion of the ground strip is held in compression between the stator and the plastic housing, whereby the terminal end of the metal ground strap provides a groundable connection to the stator and the rotor; or a crushable curved section borne by at least one of the plastic housing and the central portion of the metal ground strap and the crushable curved section of the ground strap being held in compression between the stator and the plastic housing. However, Kiefer teaches a metal bearing retainer (Fig. 1, #104) engaging an inboard bearing such that electrical continuity is established between a rotor and the metal bearing retainer; a bearing retainer fastener (Fig. 1, #120) that fastens the metal bearing retainer to a plastic housing such that the metal bearing retainer holds the inboard bearing to the plastic housing; and a metal ground strip (Fig. 1, #48) having an attachment end, a terminal end, and a central portion there between, wherein the bearing retainer fastener attaches the attachment end to the metal bearing retainer to establish electrical continuity between the rotor and the metal ground strap, Yartz teaches a motor comprising a metal ground strap that extends between a stator (Fig. 1, #41) and a plastic housing (Fig. 1, #42); and a rod-like fastener (Fig. 1, #51) clamping the stator between the plastic housing and the plastic bracket such that the metal ground strap (Fig. 1, #46) is held in compression between the stator and the plastic housing, whereby the terminal end of the metal ground strap provides a groundable connection to the stator and the rotor, and Suzuki teaches a crushable curved surface of a ground strap (Figs. 5A-5E) can be press-fit to make an electrical ground contact (Col. 1, Lines 7-14).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the motor of Neroda in view of the metal bearing retainer as taught by Kiefer because it provides a means for grounding the rotor of the motor (Kiefer, Col. 5, Lines 8-12), to modify the motor of Neroda in view of the metal grounding strap as taught by Yartz because it establishes electrical continuity between the ground strap and both the stator and the rotor (Yartz, Col. 3, Line 63- Col. 4, Line), and invention to modify the ground strap of Yartz in view of the crushable curved surface as taught by Suzuki because it simplifies the process of constructing a motor (Suzuki, Col. 1, Lines 18-34).

With respect to claim 10, Neroda in view of Yartz in view of Kiefer in view of Suzuki teaches the motor of claim 9, wherein the tie rod threadingly engages the plastic housing (even though Neroda does not explicitly teach the tie rod being threaded, it is obvious in looking at Figure 2 that the tie rod has threads that engage the bracket).

With respect to claim 12, Neroda in view of Yartz in view of Kiefer in view of Suzuki teaches the motor of claim 9, wherein the plastic housing (Yartz, Fig. 1, #42) and the stator (Yartz, Fig. 1, #41) define a slot therebetween through which the central portion of the metal ground strap extends, wherein the slot has a depth that is greater than a material thickness of the group strap yet the central portion of the ground strap is still held in compression between the plastic housing and the plastic bracket. Since the ground strap fits in the slot, the slot must have a depth that is greater than the thickness of the strap.

With respect to claim 14, Neroda in view of Yartz in view of Kiefer in view of Suzuki teaches the motor of claim 9, but it doesn't teach the bearing retainer fastener

Art Unit: 2834

being a rivet. However, rivets were well known in the art at the time of the invention. It would have been obvious to one of ordinary skill in the art at the time of the invention to use rivets as fasteners because they don't require tapped holes, and they are less likely to loosen as a result of excess motor vibration.

***Allowable Subject Matter***

Claims 4,11 & 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

With respect to claims 4 & 11, while prior art does teach the motors of claims 1 & 9, it does not teach that the attachment end and the central portion of the ground strap are substantially parallel to one another, it only teaches that the terminal end and the attachment end are substantially parallel to one another.

With respect to claim 19, while prior art does teach the motor of claim 17, and an airguide that directs the air from the impeller to the plastic housing, it does not teach that the bearing retainer fastener further fastens the airguide to the plastic housing.

***Response to Arguments***

Applicant's arguments, see page 9 lines 15 & 16, and page 11 lines 1 & 2, filed 7/25/2005, with respect to claims 4 & 11 have been fully considered and are persuasive. The 103(a) rejections of claims 4 & 11 have been withdrawn.

Applicant's arguments with respect to claims 1-3,6-10 & 12-17 have been fully considered but they are not persuasive. The response to these arguments is as follows:

With respect to the argument that the modification of the motor of Neroda with the metal bearing retainer of Kiefer and the ground strap of Yartz because Neroda does not suggest a need for grounding is not persuasive because Kiefer suggests that grounding the bearing along with the shaft is desirable because it will also provide a grounding connection for the commutator (Col. 5, Lines 8-18). Since the insulated tube of Neroda inhibits the grounding of the commutator, it would be obvious to modify it so that the electric motor of Neroda can be grounded in the manner suggested by Kiefer. One skilled in the art at the time of the invention would have known that it is desirable to ground the components electric motor (especially one that often comes into contact with moisture, such as a wet/dry vacuum) as a safety precaution in the event of a short circuit in the electrical workings of the motor such as is described by Kiefer (Col. 1, Lines 11-15; Col. 3, Lines 42-46 "motor overload").

With respect to the argument that the stators of Yartz and Kiefer are cast within an epoxy and therefor could not compress the ground strap between the stator and the cast material is not persuasive because the stators of Yartz and Kiefer are not intentioned to be used in place of the stator of Neroda. Only the teachings of the ground strap and the metal bearing retainer of Yartz and Kiefer are being applied to the electric motor of Neroda. The stator of Neroda is not cast with an epoxy material, and therefor is able to compress a ground strap between it and the plastic bracket.

With respect to the argument that the ground strap as taught by Yartz does not have three points for three distinct functions, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Kiefer teaches the terminal end point for providing a groundable connection to the stator and rotor.

With respect to claim 2, Neroda teaches a tie rod that clamps a stator between a plastic housing and a plastic bracket, and Yartz teaches a fastener extending through a ground strap to form a connection therewith (Col. 3, Lines 70-76).

With respect to claim 3, Neroda teaches a tie rod that threads into a plastic housing which in turn clamps the stator between the housing and a plastic bracket.

With respect to claim 6, an object that is compressed between two sides of a slot can never have a greater material thickness than the slot it is compressed in between, no matter how strong the force of compression is. For the grounding strap of Yartz to function as it is described, it must inherently be compressed into firm electrical contact with either the stator or the pin by the walls of the slot.

With respect to claims 7 & 14, if one of ordinary skill in the art wanted to use a rivet to hold the bearing retainer instead of the screws that Kiefer teaches, it would have been obvious to drill a through hole for the rivet to be positioned into since that is the conventional way of utilizing rivets as fasteners.

With respect to claim 12, it would have been obvious to provide a crushable curved surface on the ground strap of Yartz when it is being used between the stator and plastic bracket of Neroda.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erik D. Preston whose telephone number is 571-272-8393. The examiner can normally be reached on Monday through Friday 8-5.

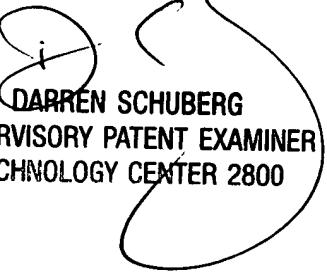
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2834

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



08/04/2005



DARREN SCHUBERG  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800